AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) Apparatus for processing data, said apparatus comprising:

processing logic operable to perform processing operations under control of program instructions and subject to interruption by a plurality of interrupt handling programs; and

a nested interrupt controller operable to control execution of said plurality of interrupt handling programs in response to priority level values associated with respective ones of said plurality of interrupt handling programs, each priority level value being divided into a first portion and a second portion; wherein

said nested interrupt controller is operative to compare a first portion of a priority level value associated with a pending interrupt handling program with a corresponding first portion of a priority level associated with an active interrupt handling program to determine whether said pending interrupt handling program should pre-empt said active interrupt handling program or wait to be activated; and

said nested interrupt controller is operative to order for activation a plurality of pending interrupt handling programs based upon a comparison of respective first portions of priority level values associated with said plurality of pending interrupt handling programs and then for any pending interrupt handling programs having equal respective first portions upon a comparison of respective second portions of said priority level values.

2. (Original) Apparatus as claimed in claim 1, wherein said first portions and said second portions are contiguous portions of said priority level values.

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3.   (Currently Amended) Apparatus as claimed in claim 1, wherein a boundary position between said first portions and said second portions within said priority level values is programmable such that ~~differing proportions of said~~ different numbers of priority level values may be allocated to said first portions and to said second portions.

4.   (Original) Apparatus as claimed in claim 1, wherein said first portions define a single group of interrupt handling programs and said second portions define relative ordering within said single group.

5.   (Original) A method of processing data, said method comprising the steps of:

performing processing operations under control of program instructions, said processing being subject to interruption by a plurality of interrupt handling programs; and

controlling nested interrupt execution of said plurality of interrupt handling programs in response to priority level values associated with respective ones of said plurality of interrupt handling programs, each priority level value being divided into a first portion and a second portion; wherein

said step of controlling compares a first portion of a priority level value associated with a pending interrupt handling program with a corresponding first portion of a priority level associated with an active interrupt handling program to determine whether said pending interrupt handling program should pre-empt said active interrupt handling program or wait to be activated; and

said step of controlling orders for activation a plurality of pending interrupt handling programs based upon a comparison of respective first portions of priority level values associated with said plurality of pending interrupt handling programs and then for any pending interrupt

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handling programs having equal respective first portions upon a comparison of respective second portions of said priority level values.

6.   (Original) A method as claimed in claim 5, wherein said first portions and said second portions are contiguous portions of said priority level values.

7.   (Currently Amended) A method as claimed in claim 5, wherein a boundary position between said first portions and said second portions within said priority level values is programmable such that ~~differing proportions of~~ different numbers of said priority level values may be allocated to said first portions and to said second portions.

8.   (Original) A method as claimed in claim 5, wherein said first portions define a single group of interrupt handling programs and said second portions define relative ordering within said single group.

9.   (New) Apparatus for processing data, comprising:

means for performing processing operations under control of program instructions, said processing operations being subject to interruption by a plurality of interrupt handling programs; and

means for controlling nested interrupt execution of said plurality of interrupt handling programs in response to priority level values associated with respective ones of said plurality of interrupt handling programs, each priority level value being divided into a first portion and a second portion;

means for comparing a first portion of a priority level value associated with a pending interrupt handling program with a corresponding first portion of a priority level associated with an active interrupt handling program to determine whether said pending interrupt handling program should pre-empt said active interrupt handling program or wait to be activated; and

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means for ordering for activation a plurality of pending interrupt handling programs based upon a comparison of respective first portions of priority level values associated with said plurality of pending interrupt handling programs and then for any pending interrupt handling programs having equal respective first portions upon a comparison of respective second portions of said priority level values.

10. (New) Apparatus as claimed in claim 9, wherein said first portions and said second portions are contiguous portions of said priority level values.

11. (New) Apparatus as claimed in claim 9, wherein a boundary position between said first portions and said second portions within said priority level values is programmable such that different numbers of priority level values may be allocated to said first portions and to said second portions.

12. (New) Apparatus as claimed in claim 9, wherein said first portions define a single group of interrupt handling programs and said second portions define relative ordering within said single group.

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